

Remarks

Claims 1-12 are currently pending in the present application. The Examiner is thanked for granting a telephone interview with the Applicant's representative, and for indicating that the foregoing claim amendments fully overcome the Akino reference and likely overcome the Jaeger reference. In accordance with the interview, independent claims 1, 6, and 10 have been amended. Support for these claim amendments may be found, for example, at paragraph [0021] of the specification. In view of these claim amendments and following remarks, the Applicant submits that the present application is now in condition for allowance.

Claims Rejected under 35 U.S.C. §103

Claims 1, 4, and 5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of U.S. Patent No. 6,093,144 to Jaeger et al., hereinafter referred to as "Jaeger". For the reasons set forth below, the Applicant respectfully submits that claims 1, 4, and 5 are fully patentable over an AAPA-Jaeger combination.

The Applicant first addresses the following assertion made on page 2 of the June 05, 2006 Office Action:

"Additionally, the applicant's admitted prior art, paragraph 0015 teaches that one or more portions of the outer casing may form an opening or inlet, thus implying a plurality of openings."

For the Examiner's benefit, the relevant portion of paragraph 0015 referenced above is cited below:

"One or more portions of the outer casing may form an opening or inlet 108, allowing sound to enter the system and impinge upon the microphone." [see paragraph 0015].

The Examiner is now directed to paragraph 0016 of the specification, wherein the statements of paragraph 0015 are placed in their proper context. Paragraph 0016 recites:

“Outer casing 102 may comprise a single piece or multiple pieces fitting together to contain the working components of the system. For example, outer casing 102 may have an upper portion 104 and a lower portion 106, which may form opening 108, allowing sound to enter the system and impinge upon microphone element 112 through a microphone gasket 100.”

Contrary to the assertion quoted above, the Applicant respectfully submits that taken in its proper context, paragraph 0015 does not describe, explicitly or implicitly, that a multi-portion casing results is indicative of multiple openings. To the contrary, paragraph 0016 explains that if the prior art casing 102 is constructed of multiple portions 104, 106, the multiple portions 104, 106 must be assembled so as to form the [single] opening 108 described. Accordingly, the Applicant respectfully avers the Office Actions’s assertion that the multi-portion casing described in AAPA implies a plurality of openings, as recited in claim 1.

Referring now to Item 3, on page 2 of the June 05, 2006 Office Action, the Applicant acknowledges the Examiner’s rescission of the previously cited motivation for combining AAPA and Jaeger. The Applicant now addresses the newly cited motivation for combining AAPA and Jaeger.

Claims 1, 4, and 5 recite a microphone enclosure comprising at least one inlet, wherein a plurality of openings form at least one tortuous path to the at least one inlet. In the context of claims 1, 4, and 5, and further, in the context of the specification, the plurality of openings, the tortuous path, and the inlet are all distinct, definable features of the present invention. For example, as illustrated in Fig. 2(b) of the specification, the plurality of openings 216, 218 may be described as comprising an interface between the environment and a tortuous path. Similarly, inlet(s) 220 may be described as comprising an interface between the tortuous path(s) and a top surface of the microphone gasket 210 of the microphone element 212. The tortuous path(s), may therefore be described as comprising the bending path(s) formed between the openings 216, 218 and the inlet(s) 220, through which sound travels to reach the inlet(s) 220, and ultimately the microphone element 212.

AAPA, to the contrary, discloses a single opening 108, through which sound enters a single tortuous path to reach a single inlet to microphone element 112. As acknowledged by the Office Action, AAPA fails to disclose an inlet having a plurality of openings. The Office Action, however, looks to Jaeger for providing this feature. The alleged motivation for combining AAPA with Jaeger

is to allow sound to travel uninhibitedly. For the reasons set forth below, the Applicant respectfully submits that one ordinarily skilled in the art would not have been motivated to modify AAPA by Jaeger. Even if, *arguendo*, one would be so motivated, the AAPA-Jaeger combination would not yield the microphone enclosure recited in claims 1, 4, and 5.

Jaeger is directed to a hearing-aid device 100 for implanting into humans. The device 100 described by Jaeger comprises a protective cover 240 having a plurality of openings 242 for allowing sound to freely reach a microphone element 208 of the device 100. (see Fig. 2C of Jaeger). Since the Jaeger device 100 is an implanted device, there is little chance of wires or similar foreign objects entering and damaging the microphone component 208. As a result, the Jaeger device 100 does not require, nor does it comprise, a protective tortuous path between the openings 242 and the microphone element 208.

The Applicant acknowledges that having multiple openings in a microphone casing, as disclosed in Jaeger, may be preferable for any number of reasons. Allowing sound to travel uninhibitedly, for example, is one such reason. Indeed, any device having a microphone element inherently desires to receive the best possible sound path to the microphone element as possible. However, having multiple openings, as explained by AAPA, may leave the microphone element vulnerable to "...an object such as a wire that could enter the hole and pierce the microphone gasket and/or microphone element itself." (see paragraph [0004] of AAPA).

To remedy this deficiency, prior art systems developed casings having a single opening forming a single tortuous path to the microphone element. (see paragraph [0006] and Figs. 1(a)-1(b) of AAPA). That is not to say that the prior art systems refrained from desiring multiple openings. Prior to the Applicant's invention, however, achieving a microphone casing having multiple openings and at least one protective tortuous path was not known. Indeed, prior to applicants invention, one skilled in the art would have had to choose between having multiple openings for improving the flow of sound (as in Jaeger), and providing adequate protection to a microphone element from foreign objects. For those microphone elements that would be exposed to the environment (as in AAPA), those skilled in the art compromised the desirable multiple openings and resorted to the single-opening/single-tortuous path design of AAPA.

Accordingly, part of the novelty of the Applicant's invention is in its ability to achieve having multiple openings and at least one protective tortuous path simultaneously. It is only with the use of

the Applicant's own specification as a road map that one skilled in the art would be able to modify AAPA to achieve the invention recited in claims 1, 4, and 5. Since using such hindsight combinations is impermissible (see In re Dance, 160 F.3d. at 1343), the Applicant respectfully submits that claims 1, 4, and 5 are fully patentable over AAPA and Jaeger, and respectfully request withdrawal of this grounds of rejection.

Claims 2, 3, and 6-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of Jaeger, and in further view of U.S. Patent No. 6,148,089 to Akino, hereinafter referred to as "Akino". For the reasons set forth below, the Applicant respectfully submits that claims 2, 3, and 6-12 are fully patentable over a theoretical combination of AAPA, Jaeger, and Akino.

Claims 2 and 3 depend from claim 1 and recite upper and lower openings converging at a sound-receiving element of a microphone. As discussed above with regard to claim 1, the theoretical combination of AAPA and Jaeger fails to disclose a microphone enclosure having multiple openings and at least one tortuous path. Adding Akino does nothing to remedy this deficiency. Nonetheless, the Office Action looks to Akino for providing the feature of openings converging on a microphone element. A close examination of Akino, however, reveals otherwise.

Akino is directed to a unidirectional microphone for mounting on note-book or mobile system personal computers. (see col. 1, lines 4-7 of Akino). According to Akino, the microphone element 2 comprises a front acoustic terminal 21, a rear acoustic terminal 22, and openings 4. (see Figs. 2B and 3B, and col. 4, lines 40-51 of Akino). Of these elements, it is only the front acoustic terminal 21 which actually receives sound. (see col. 2, lines 30-39; col. 5, lines 55-57; and Fig. 5 of Akino). The openings 4 disclosed in Akino converge on the rear acoustic terminal 22, which does not receive sound. In fact, sound only reaches the rear acoustic terminal 22 after being received by and passing through the front acoustic terminal 21. (see col. 2, lines 30-39 of Akino). As such, the Applicant respectfully submits that Akino fails to disclose the feature of a plurality of openings converging on a sound-receiving microphone element.

Akino also fails to disclose feature of multiple openings forming a tortuous path leading to a sound-receiving microphone element. The openings 4 disclosed in Akino provide no path whatsoever to the sound receiving surface 21 of the microphone element 2. The only path disclosed in Akino is a straight, non-tortuous path to the rear acoustic terminal 22, which as discussed above,

does not receive sound. Thus, for at least these reasons, the Applicant submits that Akino fails to disclose the feature of multiple openings forming a tortuous path leading to a sound-receiving microphone element.

Accordingly, since the theoretical combination of AAPA, Jaeger, and Akino fails to disclose each and every feature of claims 2 and 3, the Applicant respectfully submits that claims 2 and 3 are fully patentable over the theoretical combination and respectfully request withdrawal of this grounds of rejection.

Claims 6-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of Jaeger, and in further view of Akino. For the reasons set forth below, the Applicant respectfully submits that claims 6-9 are fully patentable over a theoretical combination of AAPA, Jaeger, and Akino.

Claims 6-9 are directed to a microphone enclosure comprising a microphone, first and second openings, and at least one inlet formed by a convergence of the first and second openings. The inlet allows sound to impinge upon a sound-receiving element of the microphone. As discussed above, and as acknowledged by the Office Action, the theoretical combination of AAPA and Jaeger fails to disclose an inlet formed by a convergence of the first and second openings. (see page 6 of the June 05, 2006 Office Action). Akino does nothing to cure this deficiency. As discussed above, Akino discloses openings 4 that converge upon the rear acoustic terminal 22 of a microphone element 2. This rear acoustic terminal 22, however, does not receive sound. The sound receiving element of Akino is the front acoustic terminal 21, which receives sound directly from a sound source, without the sound traveling through openings, paths, and/or inlets. (see Figs. 2B, 3B, and 5 of Akino). Thus, since Akino, and therefore the AAPA-Jaeger-Akino combination, fails to disclose an inlet formed by a convergence of first and second openings, the Applicants respectfully submit that the theoretical combination of AAPA, Jaeger, and Akino fails to disclose each and every feature of claims 6-9. Accordingly, for at least the reasons discussed above, withdrawal of this grounds of rejection is respectfully requested.

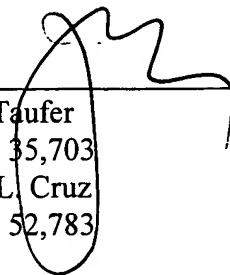
Claims 10-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of Jaeger, and in further view of Akino. For the reasons set forth below, the Applicant respectfully submits that claims 10-12 are fully patentable over a theoretical combination of AAPA, Jaeger, and Akino.

Claims 10-12 are directed to a portable radio comprising a microphone, first and second openings, and at least one inlet formed by a convergence of the first and second openings. The inlet allows sound to impinge upon a sound-receiving element of the microphone. As discussed above, and as acknowledged by the Office Action, the theoretical combination of AAPA and Jaeger fails to disclose an inlet formed by a convergence of the first and second openings. (see page 8 of the June 05, 2006 Office Action). Akino does nothing to cure this deficiency. As discussed above, Akino discloses openings 4 that converge upon the rear acoustic terminal 22 of a microphone element 2. This rear acoustic terminal 22, however, does not receive sound. The sound receiving element of Akino is the front acoustic terminal 21, which receives sound directly from a sound source, without the sound traveling through openings, paths, and/or inlets. (see Figs. 2B, 3B, and 5 of Akino). Thus, since Akino, and therefore the AAPA-Jaeger-Akino combination, fails to disclose an inlet formed by a convergence of first and second openings, the Applicants respectfully submit that the theoretical combination of AAPA, Jaeger, and Akino fails to disclose each and every feature of claims 10-12. Accordingly, for at least the reasons discussed above, withdrawal of this grounds of rejection is respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, the Applicant submits that the present Application, including claims 1-12, is now in condition for allowance. An indication reflecting the same is respectfully requested.

Respectfully submitted,



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